OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

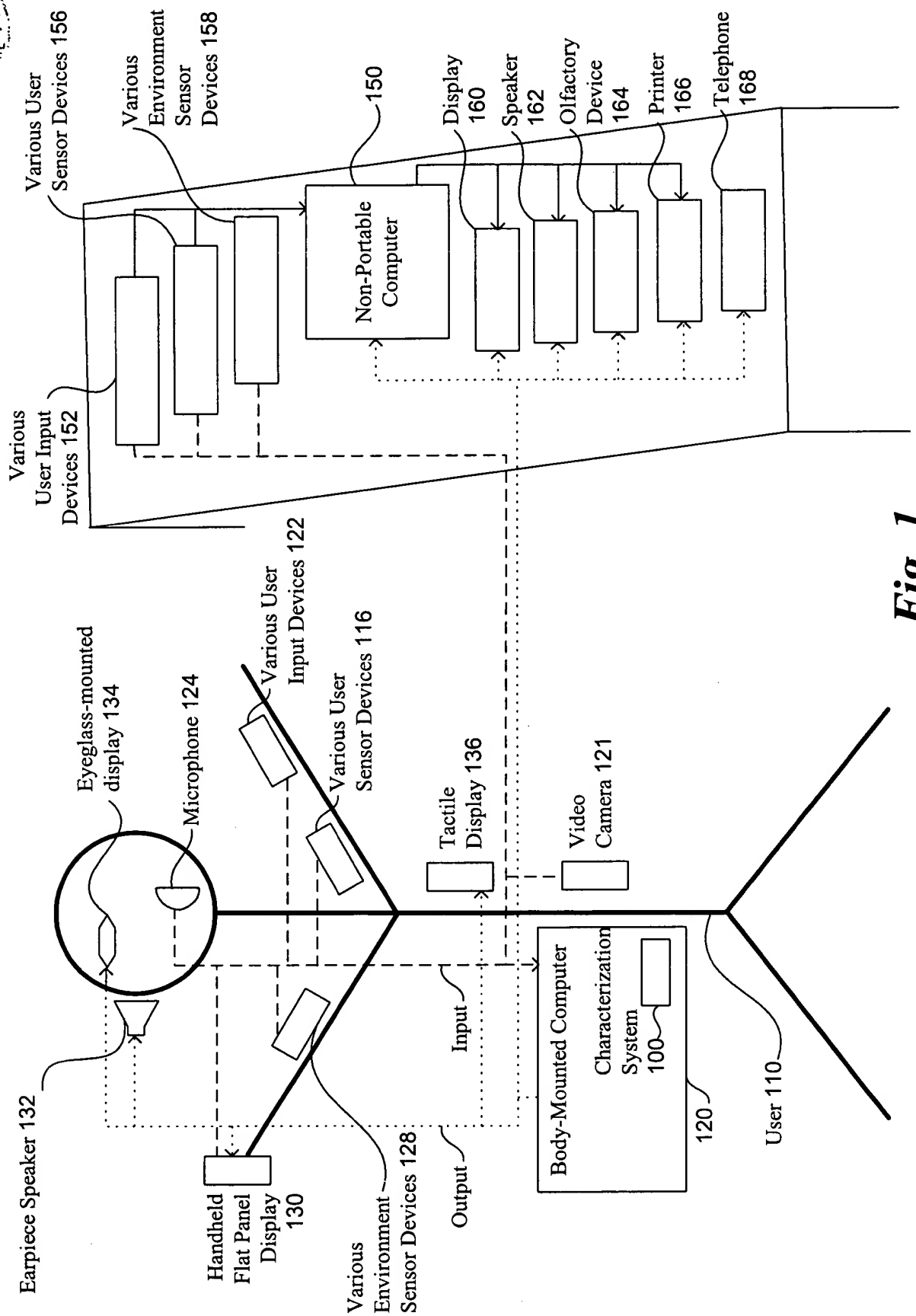



*Fig. 1*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

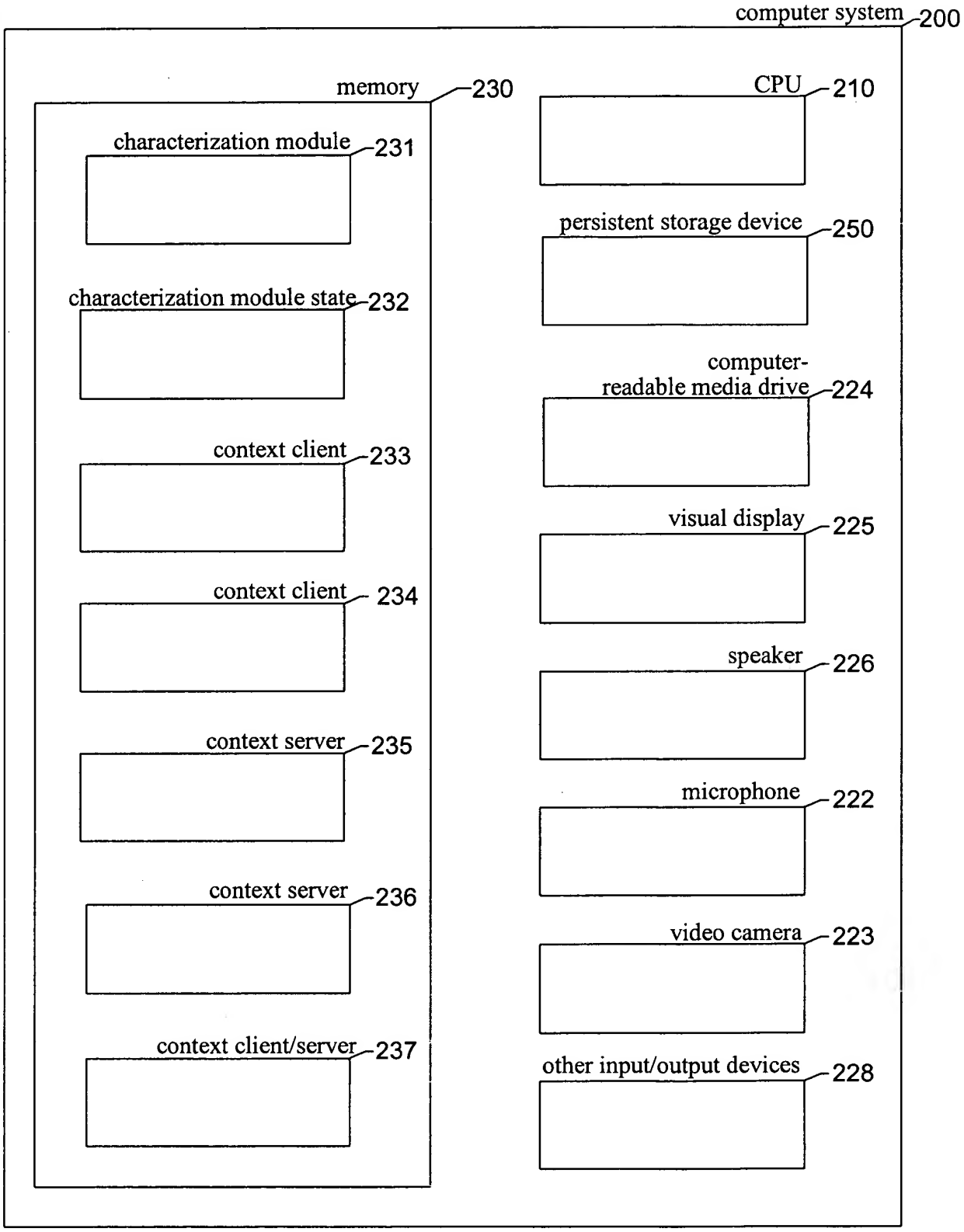



*Fig. 2*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

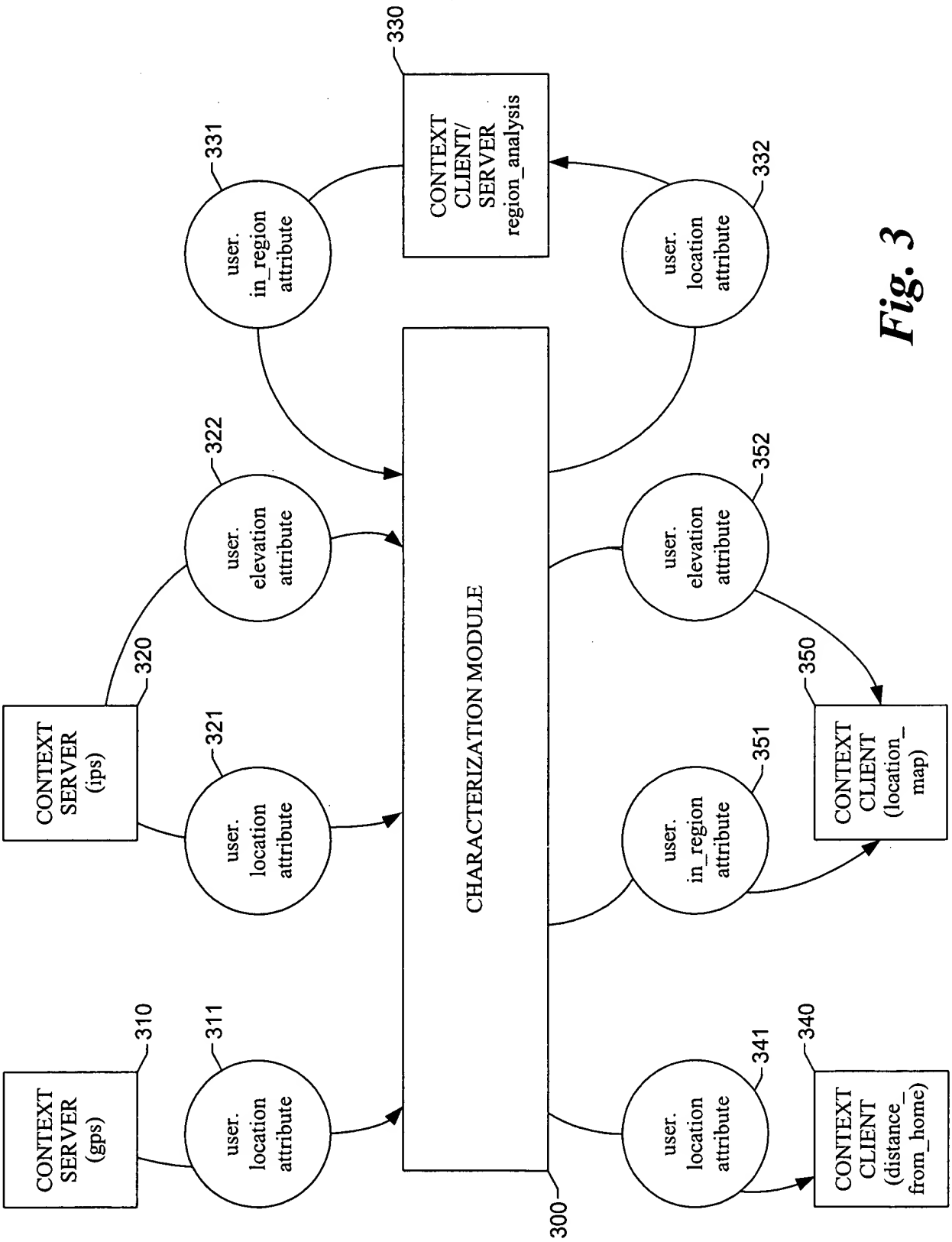



*Fig. 3*

PATENT & TRADEMARK OFFICE
SEP 15 2004
JC24
O I P E



context server table 400

| | context server name | version | installation date | filename | request handler |
|---|---|---|---|---|---|
| 401 | gps | 1 | 2/10/2000 | gps.exe | (reference) |
| 402 | ips | 1 | 2/21/2000 | ips.exe | (reference) |
| 403 | location_region_analysis | 1 | 2/10/2000 | l_r_a.exe | (reference) |
| | 411 | 412 | 413 | 414 | 415 |

*Fig. 4*

500 attribute instance table

| | attribute name | context server name | value | uncertainty | timestamp | units | number of context clients consuming |
|---|---|---|---|---|---|---|---|
| 501 | user.location | gps | 47° 38.73' N, 122° 18.43' W | 0° .09' | 13:11:04.023 2/22/2000 | degrees/minutes | 2 |
| 502 | user.location | ips | 47° 38.745' N, 122° 18.424' W | 0° .021' | 13:11:01.118 2/22/2000 | degrees/minutes | 2 |
| 503 | user.elevation | ips | 22 | .5 | 13:11:01.118 2/22/2000 | meters | 1 |
| 504 | user.in_region | location_region_ analysis | none | none | none | none | 0 |
| | 511 | 512 | 513 | 514 | 515 | 516 | 517 |

*Fig. 5*

PATENT & TRADEMARK OFFICE
SEP 15 2004
1024
O I P E



600

context client table

| context clent name | message handler |
|---|---|
| location_map | (reference) |
| distance_from_home | (reference) |
| region_analysis | (reference) |

601 602 603

611 612

*Fig. 6*

700

attribute instance table

| | attribute name | context server name | value | uncertainty | timestamp | units | number of context clients consuming |
|---|---|---|---|---|---|---|---|
| 701 | user.location | gps | 47° 38.73' N, 122° 18.43' W | 0° .09' | 13:11:04.023 2/22/2000 | degrees/minutes | 2 |
| 702 | user.location | ips | 47° 38.745' N, 122° 18.424' W | 0° .021' | 13:11:01.118 2/22/2000 | degrees/minutes | 2 |
| 703 | user.elevation | ips | 22 | .5 | 13:11:01.118 2/22/2000 | meters | 1 |
| 704 | user.in_region | location_region_ analysis | none | none | none | none | 1 |

711 712 713 714 715 716 717

*Fig. 7*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

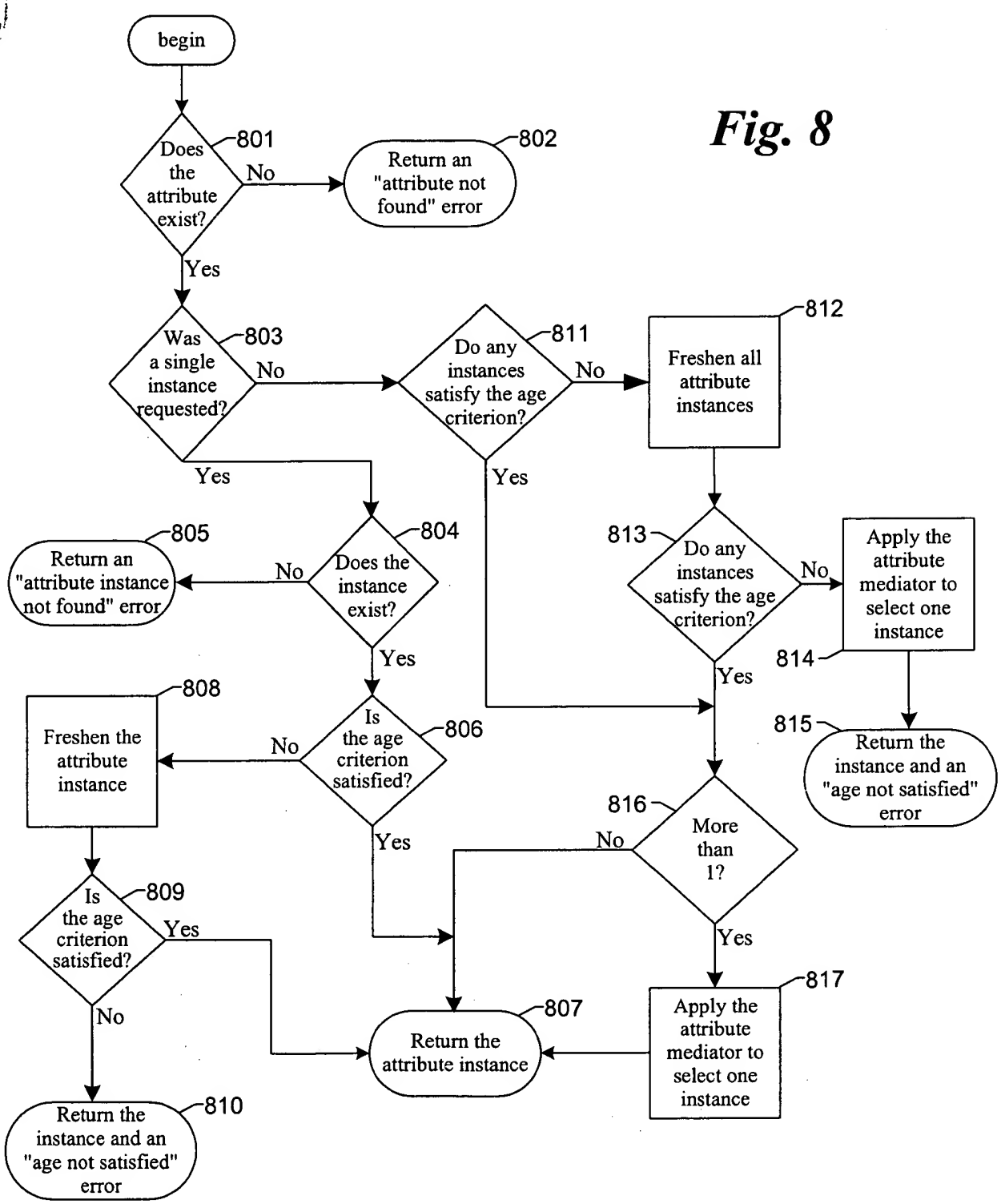



*Fig. 8*

SEP 15 2004



900

attribute instance table

| | attribute name | context server name | value | uncertainty | timestamp | units | number of context clients consuming |
|---|---|---|---|---|---|---|---|
| 901 | user.location | gps | 47° 38.73' N, 122° 18.43' W | 0° .09' | 13:11:04.023 2/22/2000 | degrees/minutes | 2 |
| 902 | user.location | ips | 47° 38.745' N, 122° 18.424' W | 0° .021' | 13:11:01.118 2/22/2000 | degrees/minutes | 2 |
| 903 | user.elevation | ips | 22.25 | .5 | 13:11:06.565 2/22/2000 | meters | 1 |
| 904 | user.in_region | region_analysis | none | none | none | none | 1 |
| | 911 | 912 | 913 | 914 | 915 | 916 | 917 |

*Fig. 9*

1000

condition table

| | condition name | context client name | first logical parameter | second logical parameter | comparison value | logical operator |
|---|---|---|---|---|---|---|
| 1001 | in_region_true | region_analysis | user.in_region | none | TRUE | = |
| | 1011 | 1012 | 1013 | 1014 | 1015 | 1016 |

*Fig. 10*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

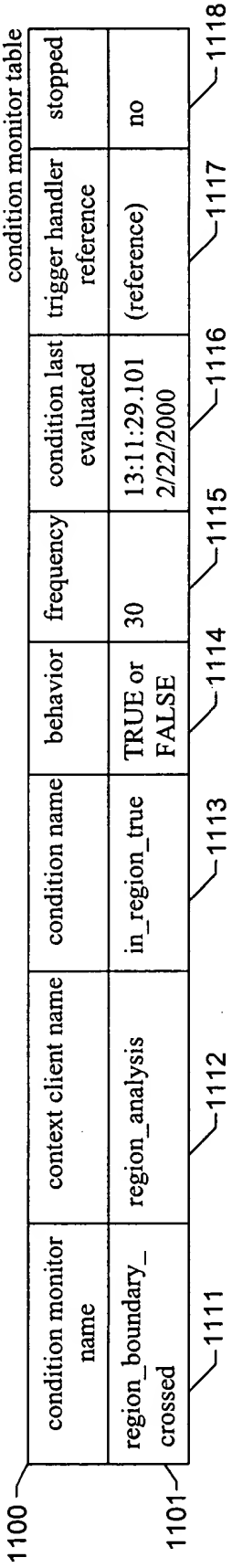



*Fig. 11*

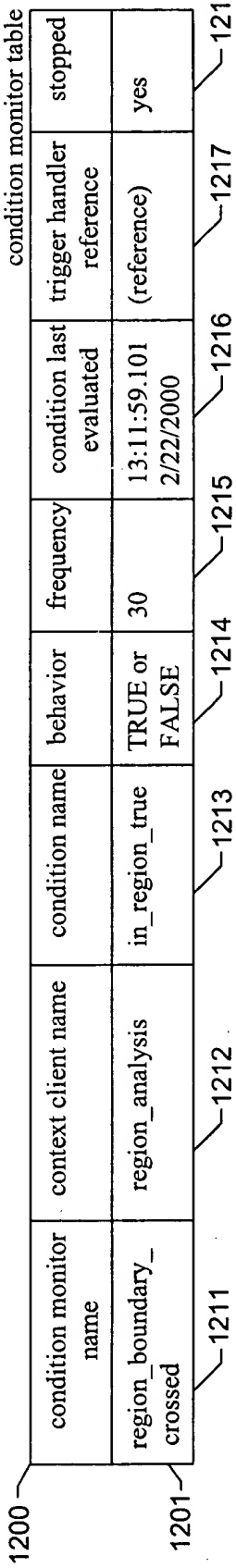



*Fig. 12*

OIPE
SEP 15 2004
PATENT & TRADEMARK OFFICE

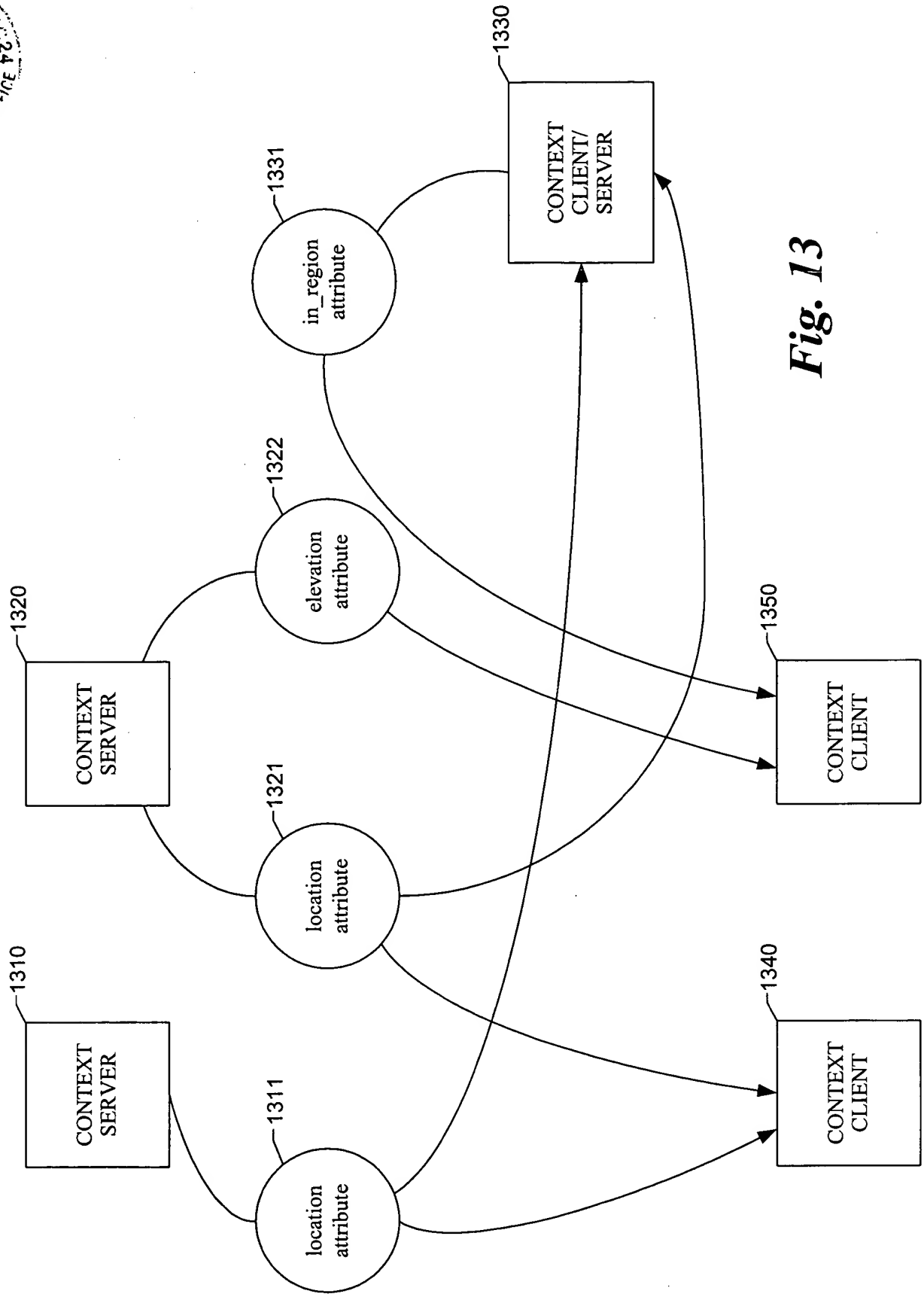



*Fig. 13*

OIPE
SEP 15 2004
JC24
PATENT & TRADEMARK OFFICE

attribute request table

| | attribute name | context client name |
|---|---|---|
| 1401 | user.location | distance_from_home |
| 1402 | user.in_region | location_map |
| 1403 | user.location [gps] | location_region_analysis |
| 1404 | user.elevation | location_map |

1411 1412

*Fig. 14*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

- **User.**
  - Desired_privacy_level
  - Interruptibility
  - Speed
  - Direction
  - Acceleration
  - Availability.
    - Cognitive_availability
    - Tactile_availability
    - Manual_availability
    - Visual_availability
    - Oral_availability
    - Auditory_availability
  - Proximity.<Item or place name>
  - Mood.
    - Happiness
    - Sadness
    - Anger
    - Frustration
    - Confusion
  - Activity.
    - Driving
    - Eating
    - Running
    - Sleeping
    - Talking
    - Typing
    - Walking
  - Location.
    - Place_name
    - Latitude
    - Longitude
    - Altitude
    - Room
    - Floor
    - Building
    - Address
    - Street
    - City
    - County
    - State
    - Country
    - Postal_Code
  - Destination. (same as User.Location.)
  - Physiology.
    - Pulse
    - Body_temperature
    - Blood_pressure
    - Respiration
- **Person.**<name or ID>. (same as User.)
- **Platform.**
  - UI.
    - Oral_input_device_availability
    - Manual_input_device_availability
    - Tactile_output_device_availability
    - Visual_output_device_availability
    - Auditory_output_device_availability
- **Platform.** (continued)
  - CPU.
    - Load
    - Speed
  - Memory.
    - Total_capacity
    - Used
  - Storage.
    - Total_capacity
    - Used
  - Connectivity.
    - Connection_status
    - Connection_speed
    - Connection_type/device
    - Connection_activity
  - Power.
    - Power_source
    - Power_level
- **Environment.**
  - People.
    - Nearest
    - Number_present
    - Number_close
  - Local.
    - Time
    - Date
    - Temperature
    - Pressure
    - Wind_speed
    - Wind_direction
    - Absolute_humidity
    - High_forecast_temperature
    - Low_forecast_temperature
    - People_present
    - Ambient_noise_level
    - Ambient_light_level
    - Days.<previous or future>.
      - High_temperature
      - Low_temperature
      - Precipitation_type
      - Precipitation_amount
  - Place.<place name>. (same as Environment.Local)
- **Application.**
  - Mail.
    - Available
    - New_messages_waiting
    - Messages_waiting_to_be_sent
  - Phone.
    - Available
    - In_use
    - On/off
    - Notification_mechanism
    - Call_incoming
    - Caller_ID
  - Sound_recorder.
    - Available
    - Recording

***Fig. 15***

SEP 15 2004 JC24 PATENT & TRADEMARK OFFICE

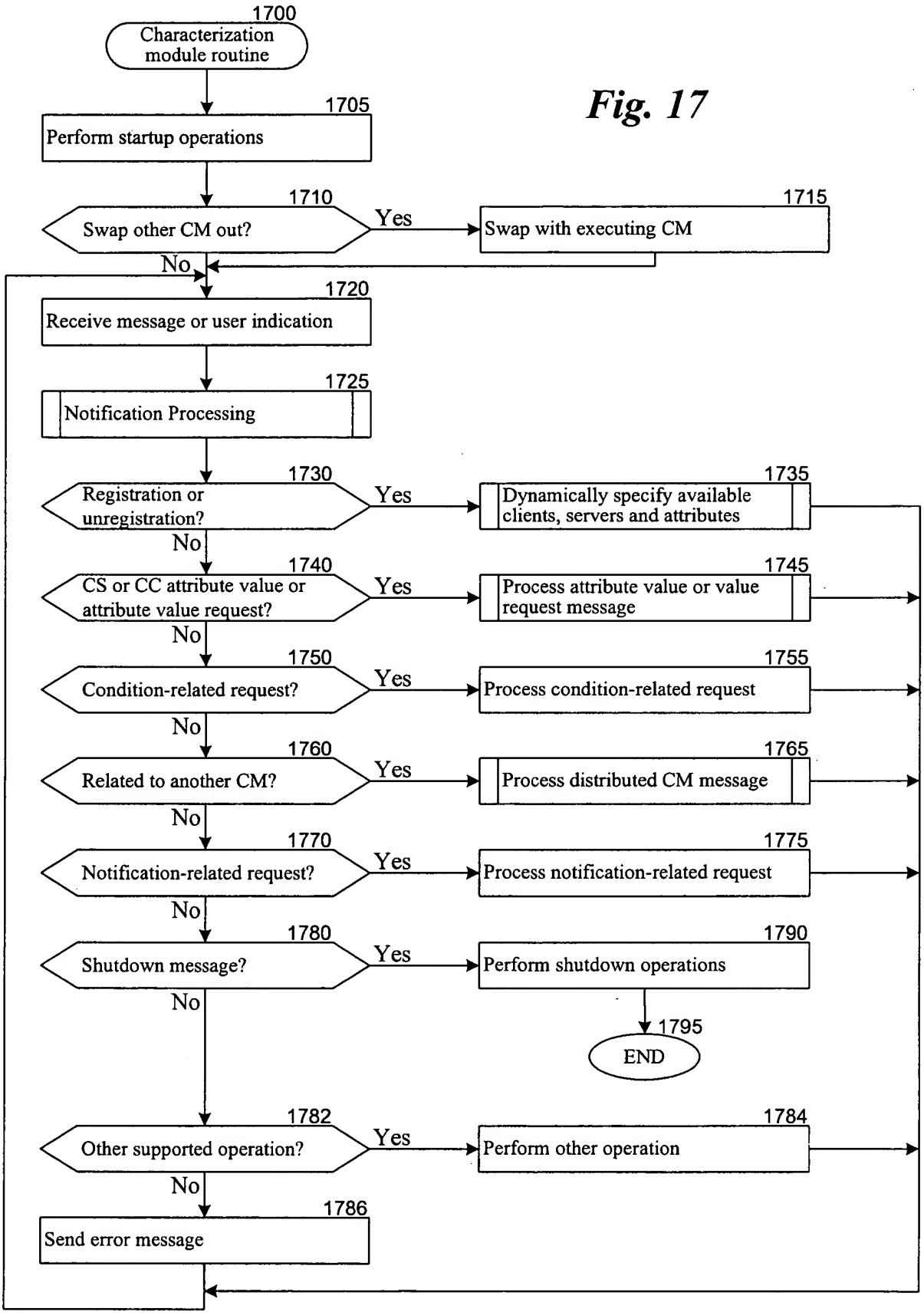
*Fig. 16*

1) User Setting
   a) Mental Context
      i) Meaning
      ii) Cognition
         (1) Divided User Attention
         (2) Task Switching
         (3) Background Awareness
      iii) Solitude
      iv) Privacy
         (1) Desired Privacy
         (2) Perceived Privacy
      v) Social Context
      vi) Affect
   b) Physical Situation
      i) Body
         (1) Biometrics
         (2) Posture
         (3) Motion
         (4) Physical Encumberment
            (a) Senses
               (i) Eyes
               (ii) Ears
               (iii) Tactile
               (iv) Hands
               (v) Nose
               (vi) Tongue
            (b) Workload demands/effects
            (c) Interaction with computer devices
            (d) Interaction with people
            (e) Physical Health
      ii) Environment
         (1) Time/Space
         (2) Objects
         (3) Persons
            (a) Audience/Privacy Availability
               (i) Scope of Disclosure
               (ii) Hardware affinity for privacy
               (iii) Privacy Indicator for User
               (iv) Privacy Indicator for Public
               (v) Watching Indicator
               (vi) Being Observed Indicator
         (4) Ambient Interference
            (a) Visual
            (b) Audio
            (c) Tactile

2) Computer
   a) Power
   b) Configuration
      i) User Input Systems
         (1) Hand/Haptic
            (a) Keyboard/Keystrokes
         (2) Voice/Audio
         (3) Eye Tracking
         (4) Cursors
            (a) Axis
            (b) Resolution
               (i) Selection
               (ii) Invocation
            (c) Accelerators
      ii) Output Systems
         (1) Visual
            (a) Resolution
         (2) Audio
            (a) Public/Private
         (3) Haptic
      iii) External Resources
         (1) I/O devices
         (2) Connectivity
   c) Data
      i) Quantity/State
      ii) Urgency/Importance
         (1) Use of Prominence
      iii) Modality
      iv) Sensitivity/Purpose
         (1) Privacy Issues
         (2) Use of Association
         (3) Use of Safety
      v) Source/Ownership
         (1) Types
            (a) User generated
            (b) Other computers or people
            (c) Sensor
            (d) PC State
         (2) Use of Association

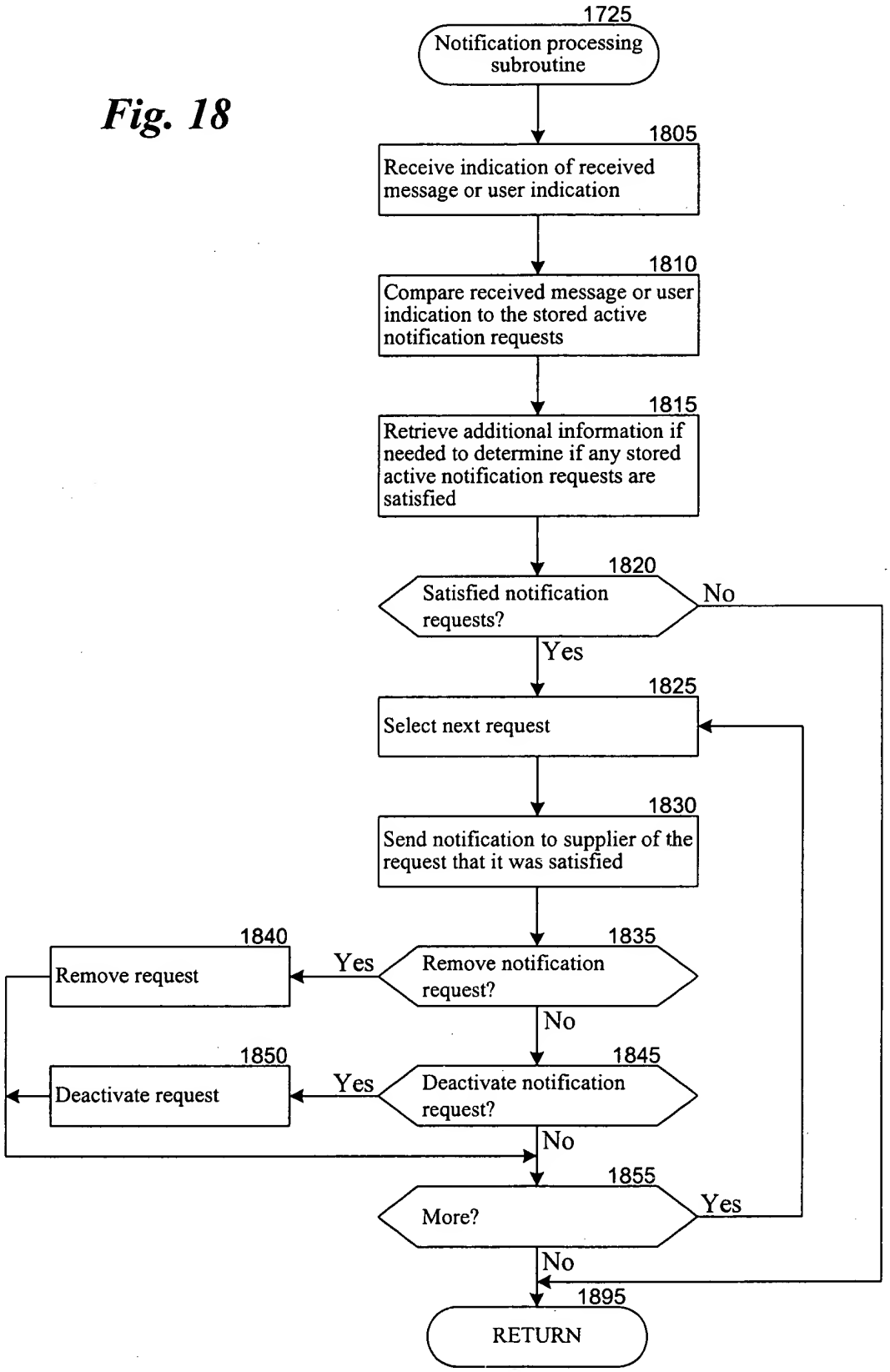
OIPE
SEP 15 2004
PATENT & TRADEMARK OFFICE

*Fig. 17*



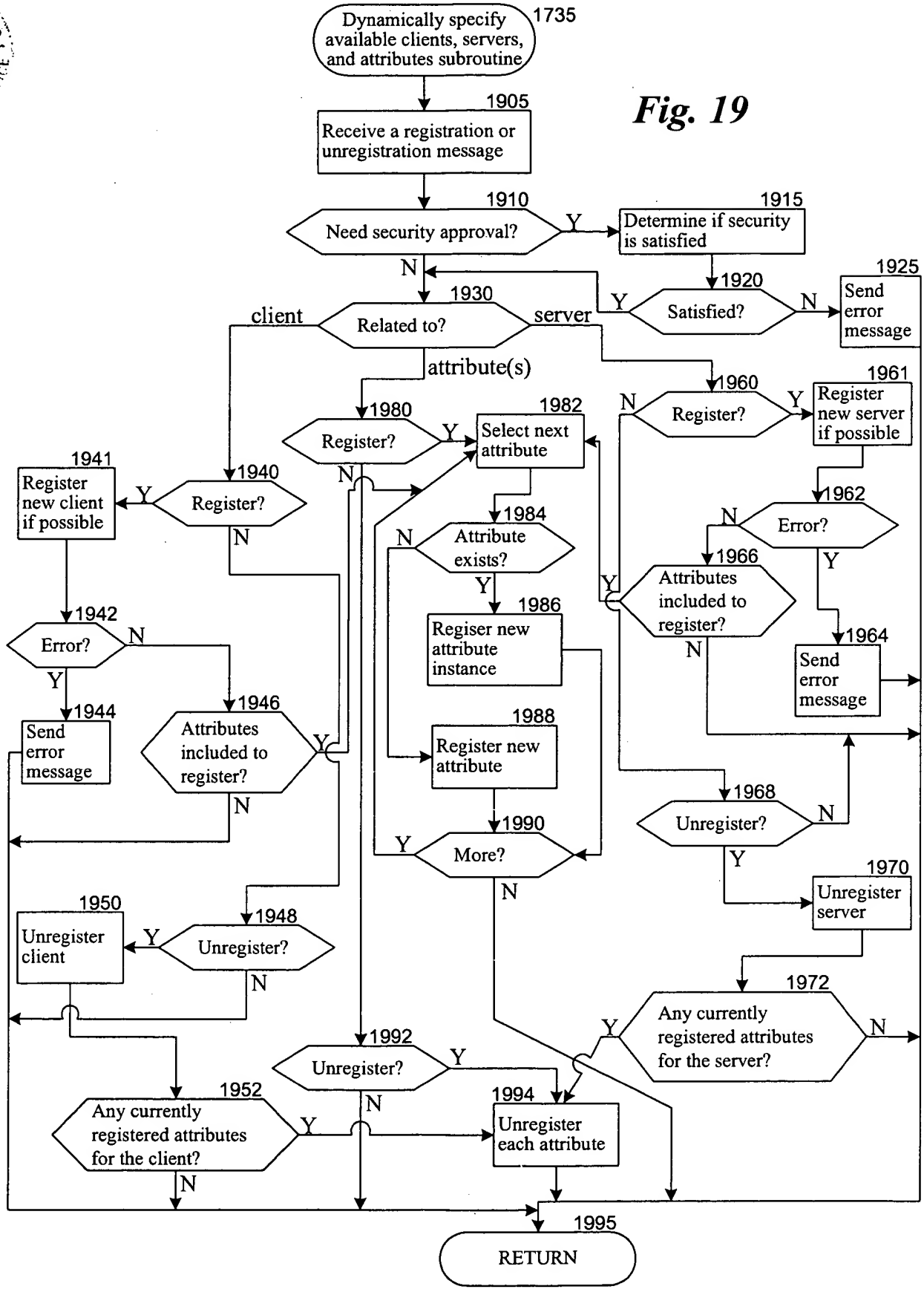
SEP 15 2004

*Fig. 18*



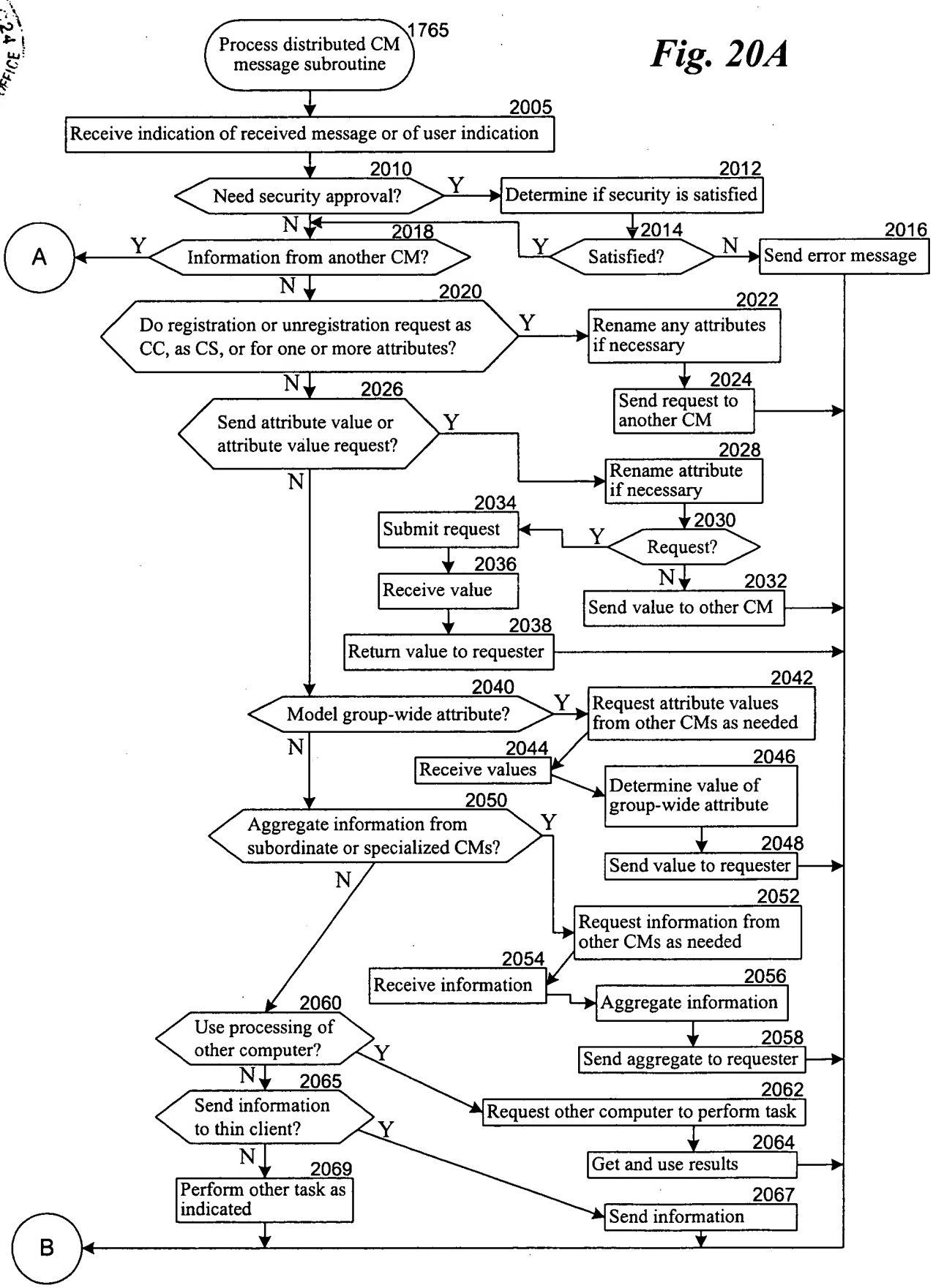
OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

*Fig. 19*



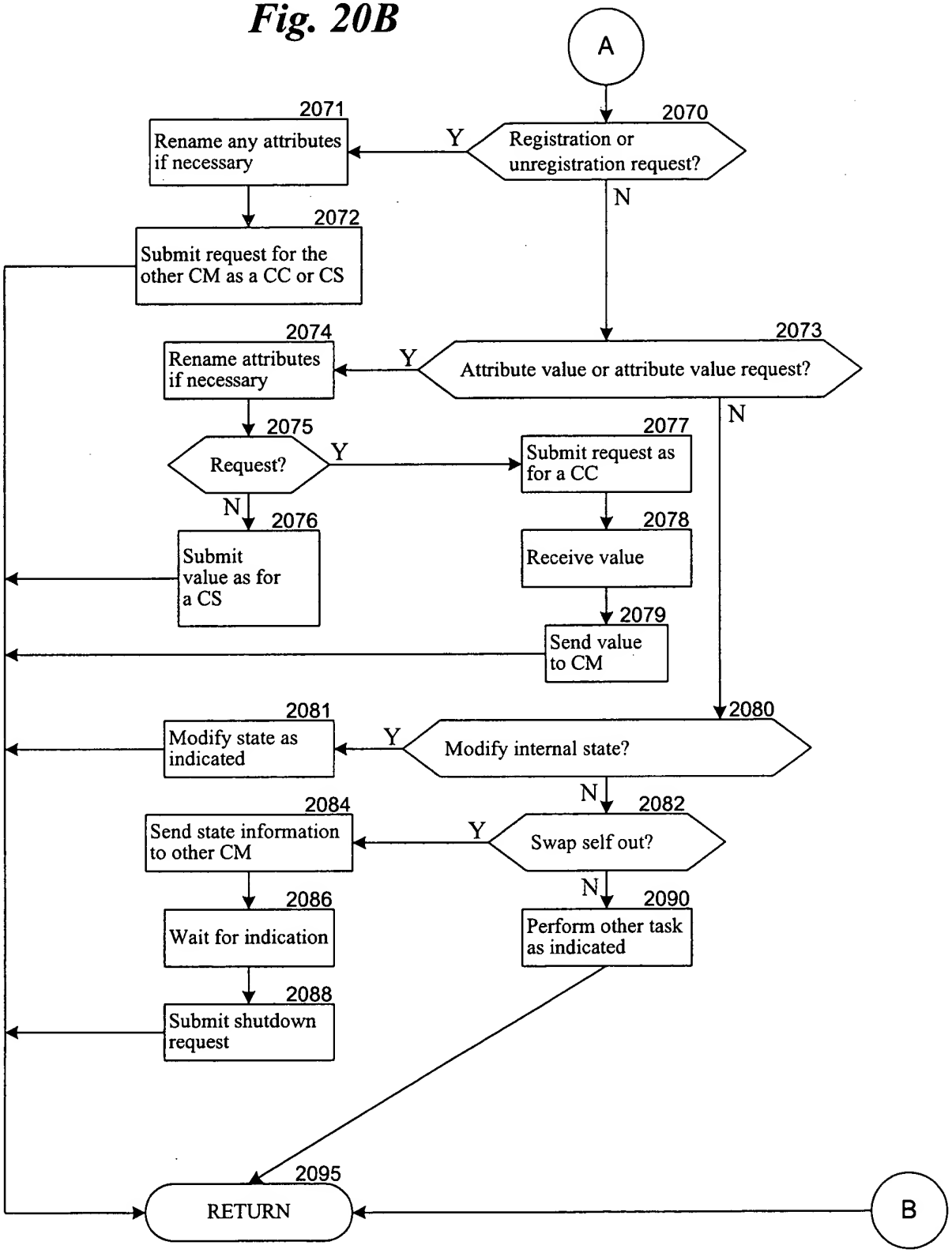
OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

*Fig. 20A*



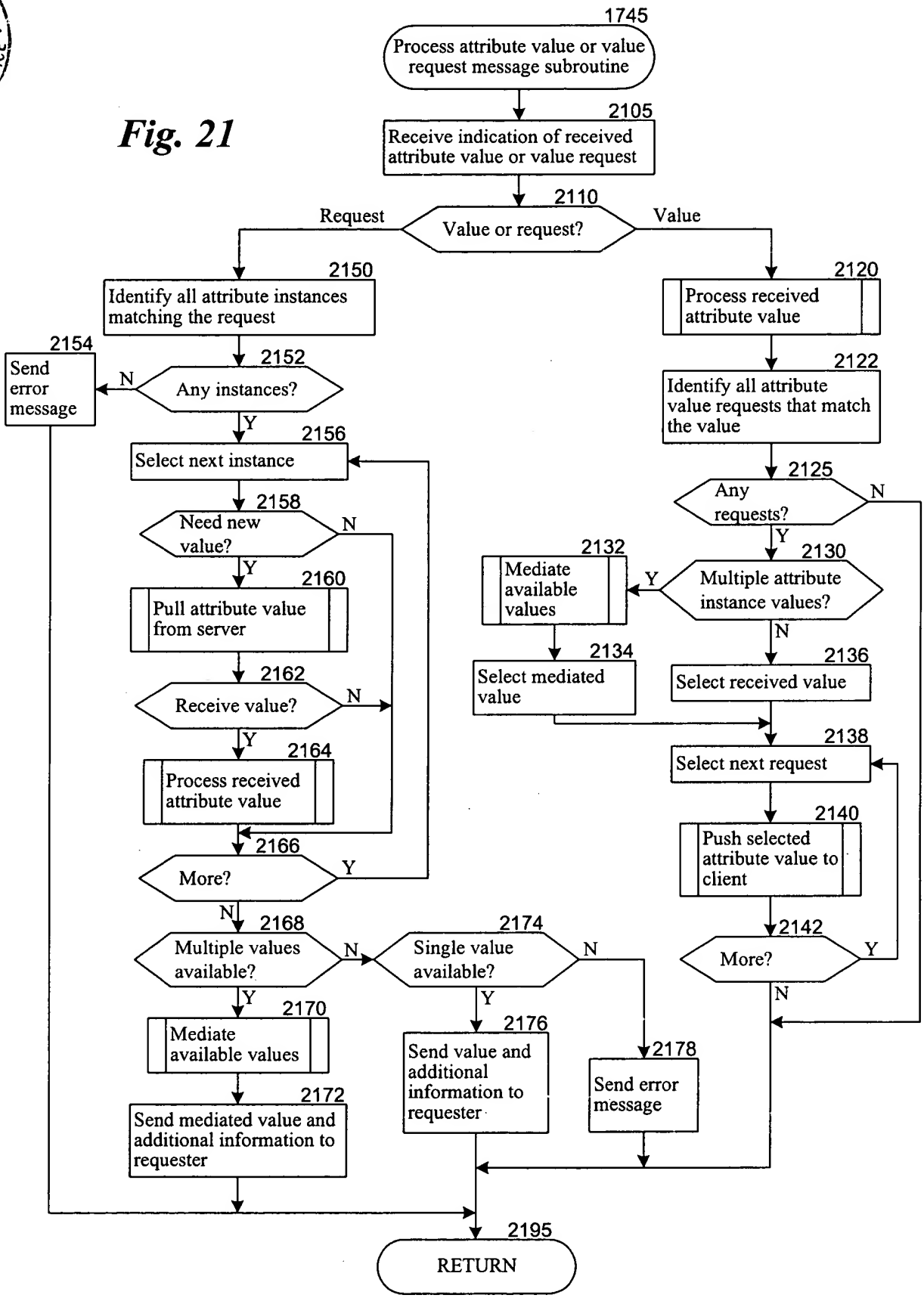
SEP 15 2004 JC24 PATENT & TRADEMARK OFFICE

*Fig. 20B*



SEP 15 2004 PATENT & TRADEMARK OFFICE

*Fig. 21*



OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

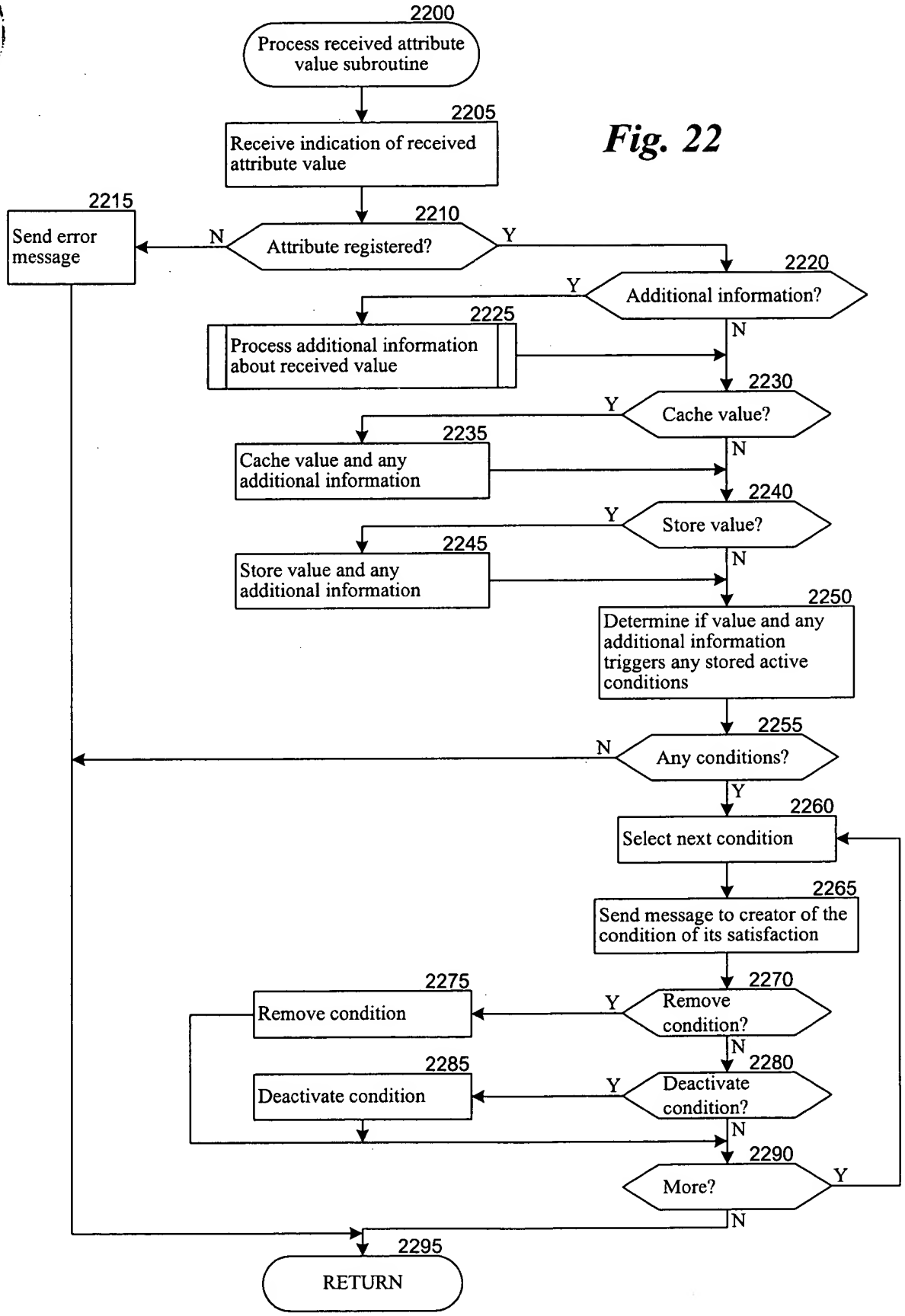



*Fig. 22*

OIPE
SEP 15 2004
PATENT & TRADEMARK OFFICE

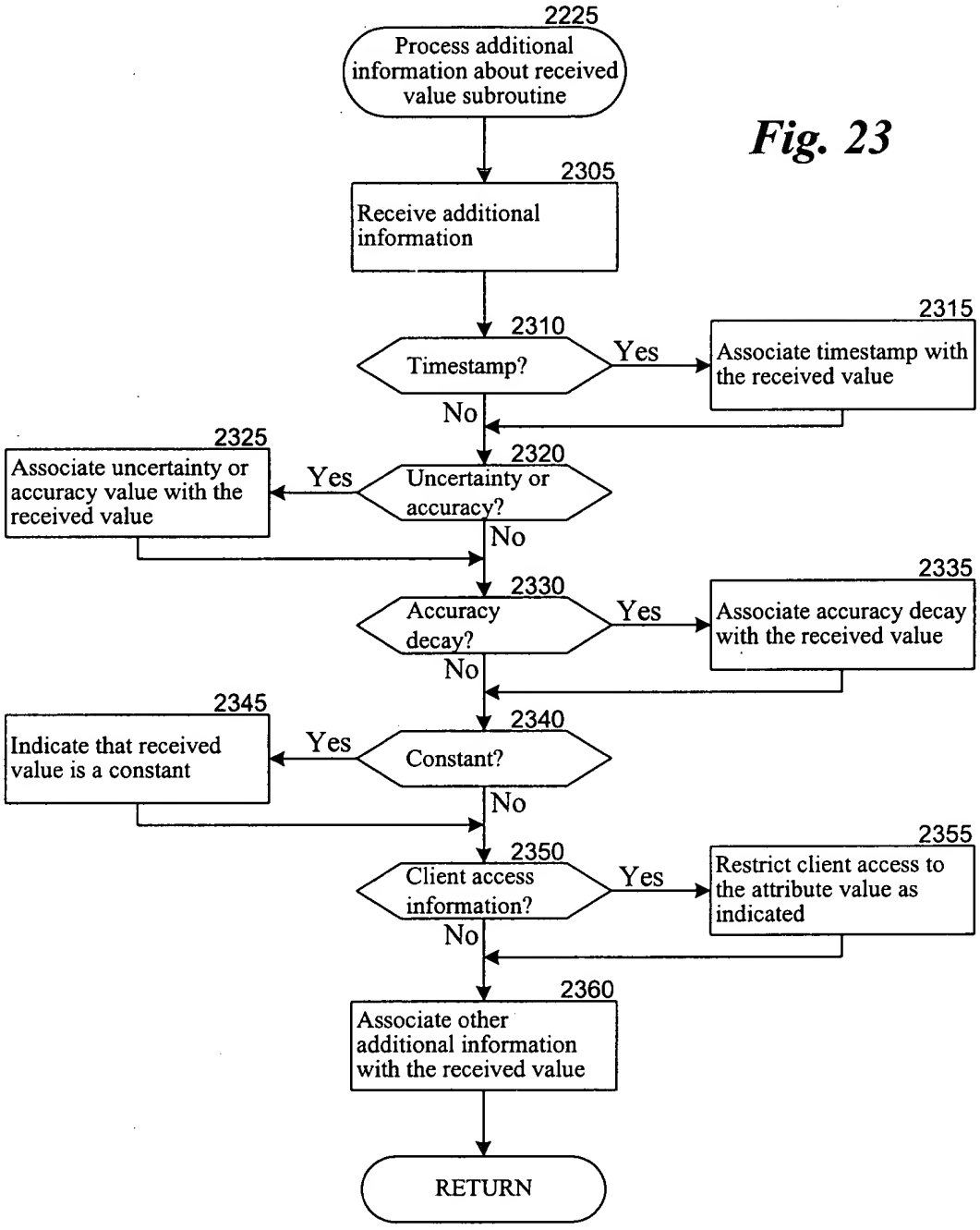



*Fig. 23*

OIPE
SEP 15 2004
PATENT & TRADEMARK OFFICE

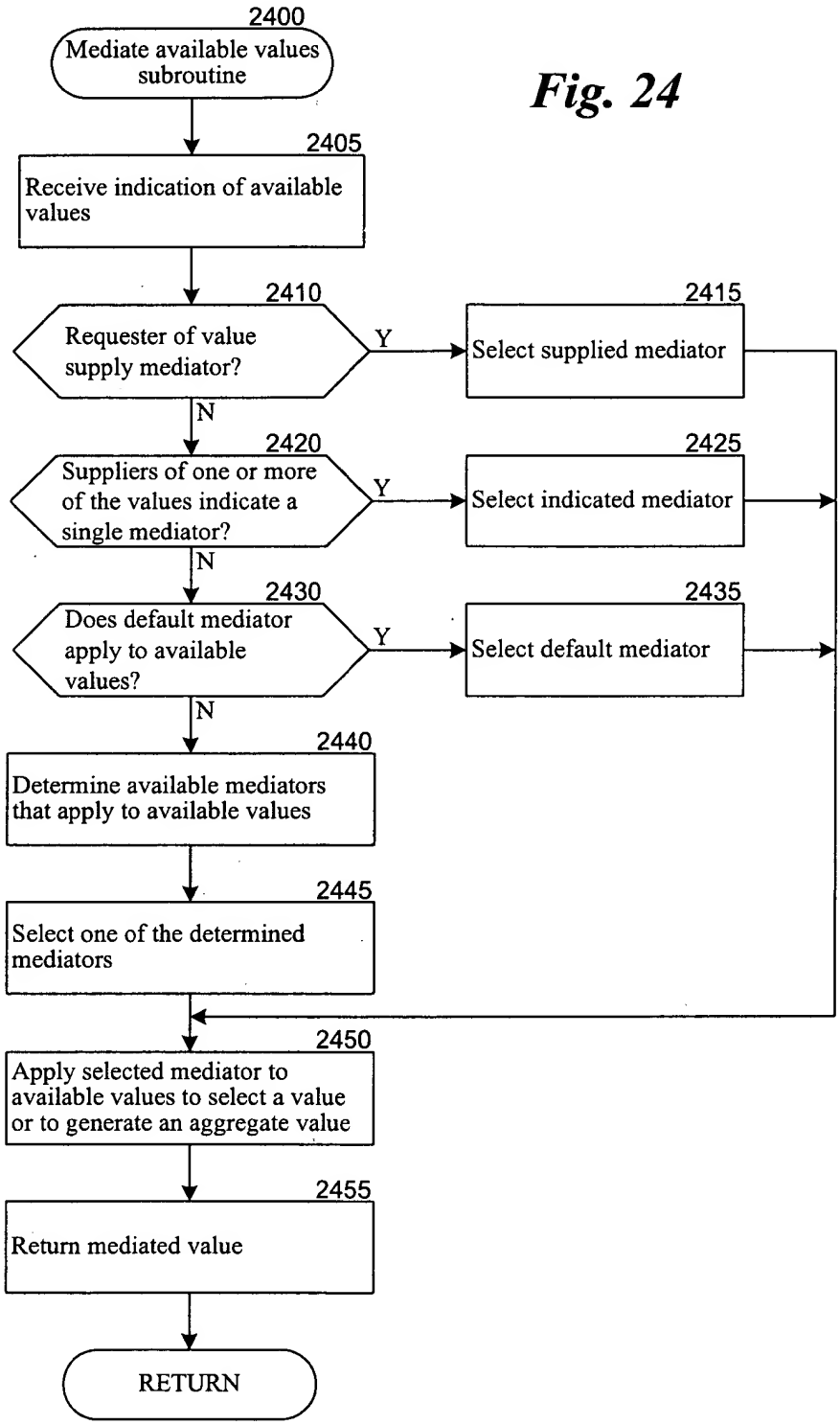



*Fig. 24*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

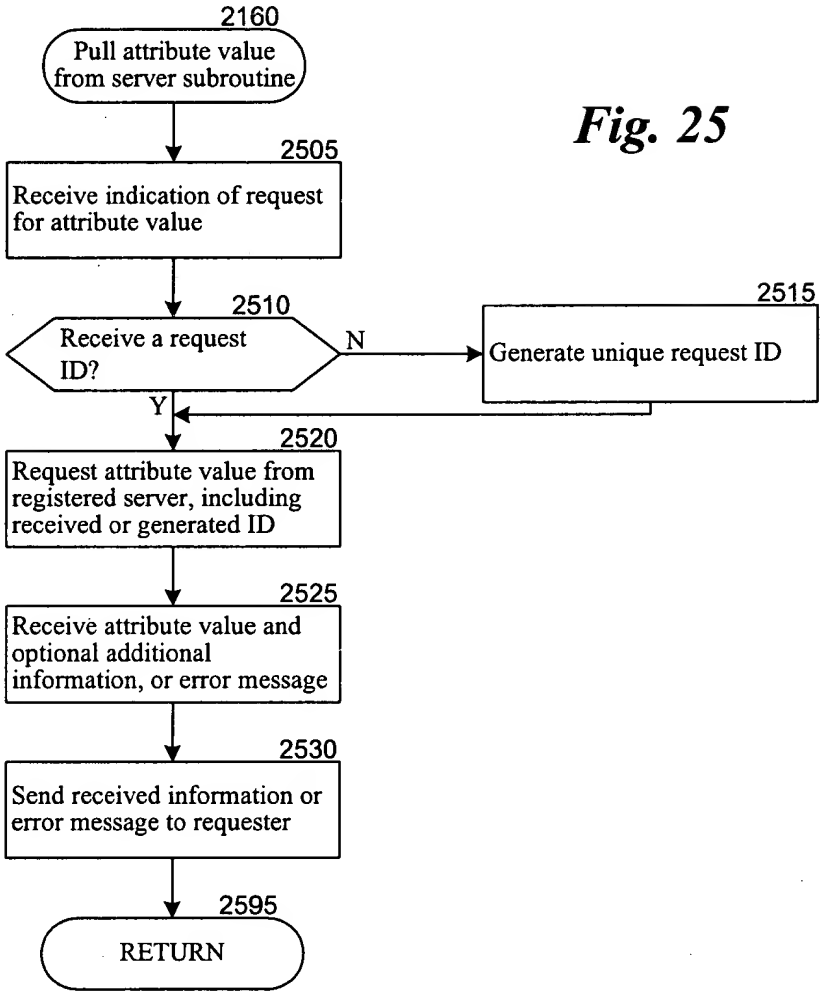



*Fig. 25*

OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

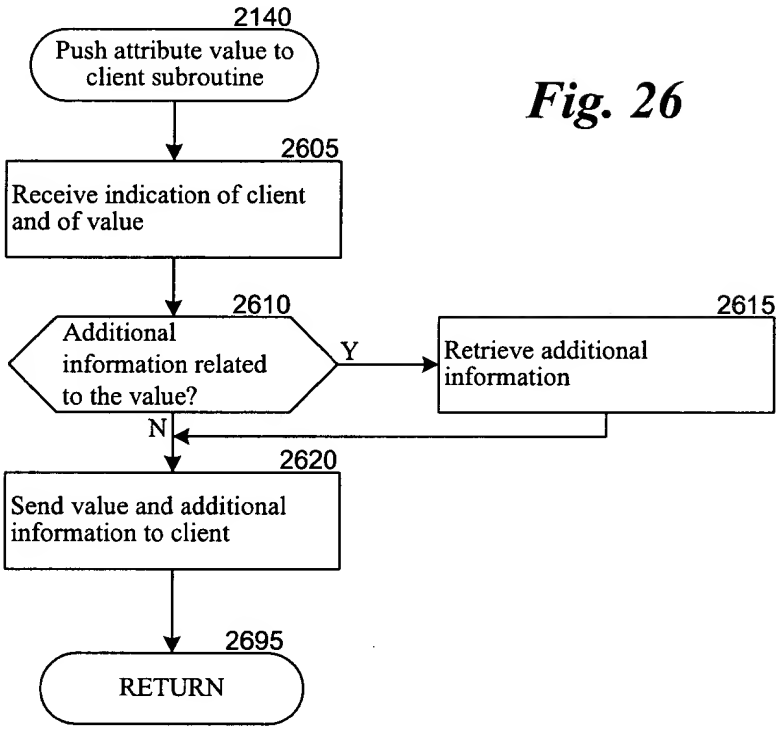
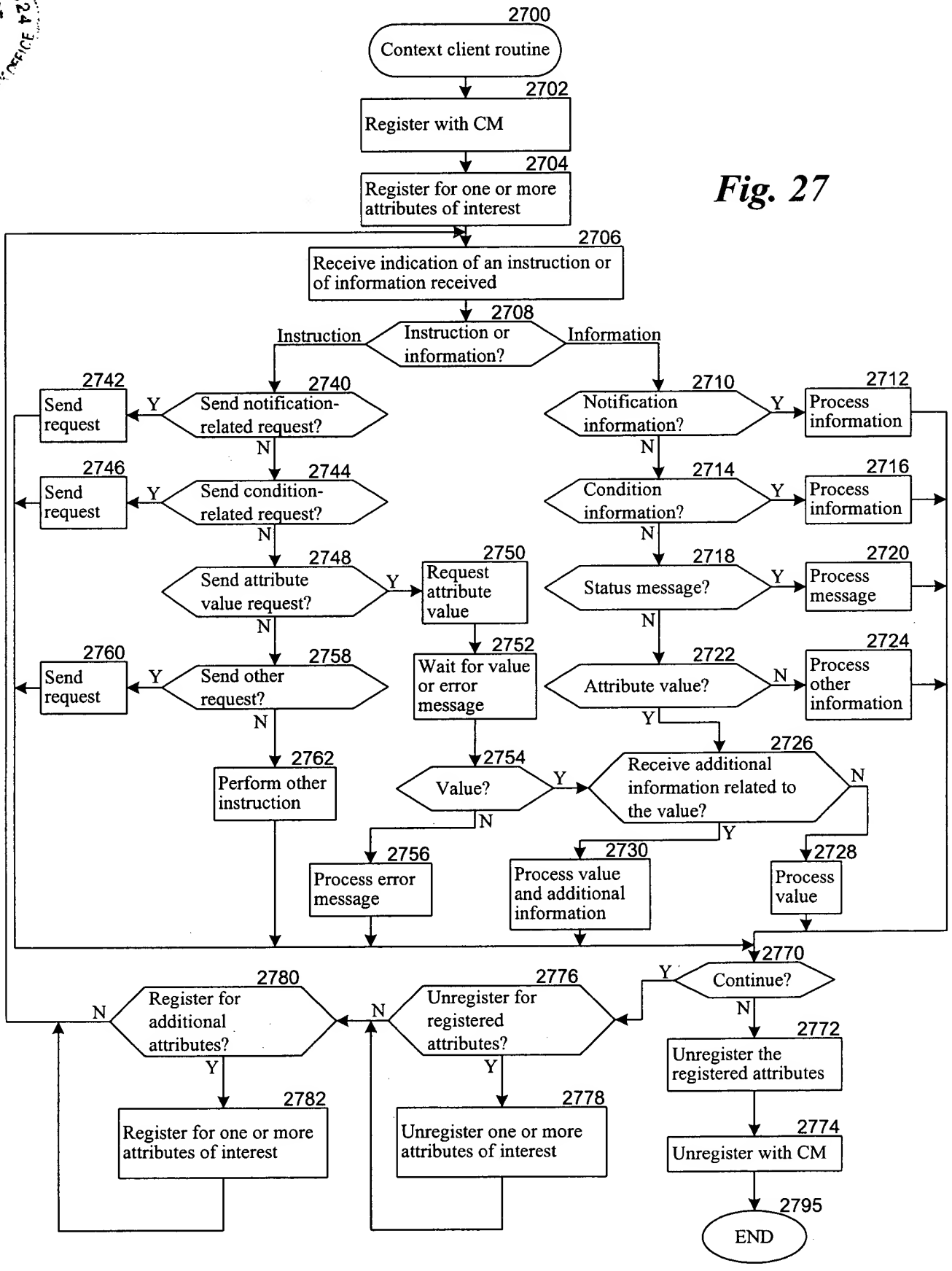



*Fig. 26*

OIPE SEP 15 2004 JC24 PATENT & TRADEMARK OFFICE

*Fig. 27*



OIPE JC24
SEP 15 2004
PATENT & TRADEMARK OFFICE

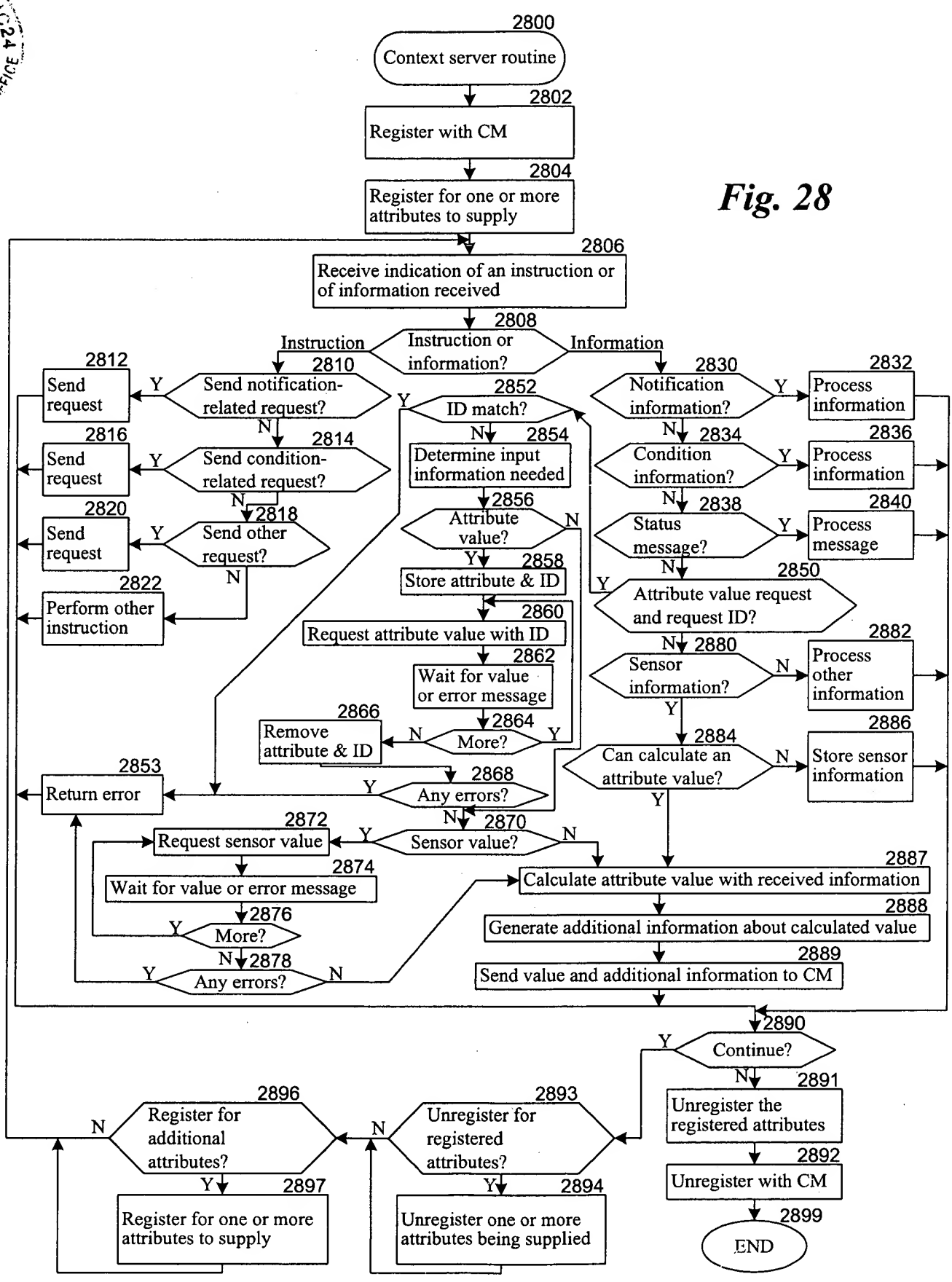



*Fig. 28*